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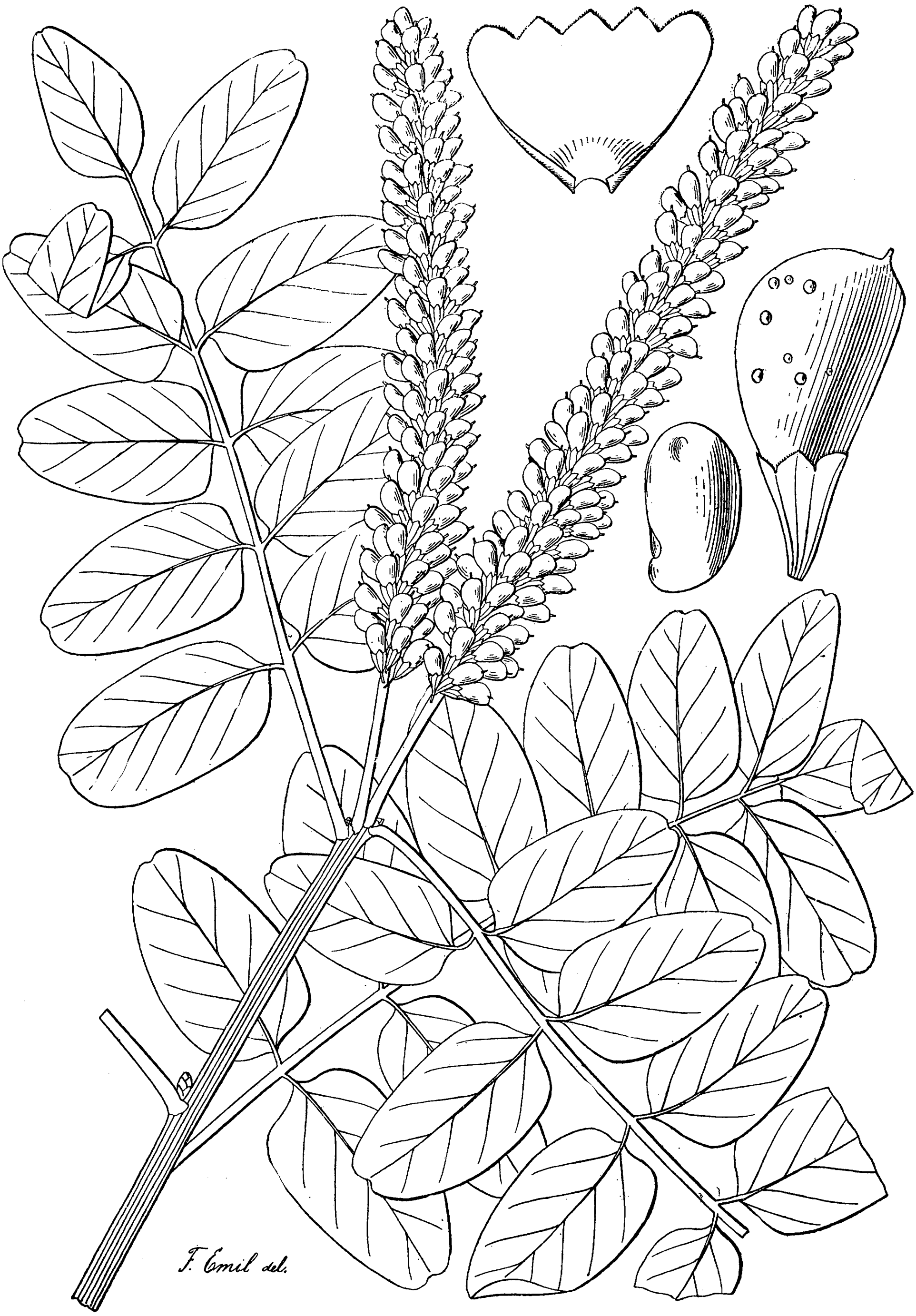

AMORPHA VIRGATA SMALL.

In some few cases the outlines of the guard cells are visible in this species; one stoma was seen which appeared superficial, all the rest on the same capsule were immersed. Venturi in the Muscologia Gallica says of *O. psilocarpum*, that it is a singular species, which unites the characters and smooth capsule of *O. leiocarpum*, with the section having immersed stomata. In fact it is with *O. striatum* (*O. leiocarpum*) that it is liable to be confounded, but it may readily be distinguished by the absence of the broad erose cilia.

Studies in the Botany of the Southeastern United States—I.

By John K. Small.

(Plates 170, 171.)

Having taken up the flora of the Southeastern United States as a special field of study in this and the papers to follow, entitled *Studies in the Botany of the Southeastern United States*, I intend to put on record facts concerning the plants of that very interesting region not yet made known, with a view to more extended and connected work when the field has been better explored. The papers will include, for the most part, descriptions of and notes on new species and additions to our flora; also remarks on native and introduced plants, facts concerning geographical and altitudinal distribution, and the relations between the geological formations and certain species. This latter side of botany, much neglected in the past, is exhibited in a striking manner in portions of the Southern States. The sources from which the following contributions are derived are my own collections in the South and the vast amount of material preserved in the Columbia College Herbarium, which includes, besides many types and specimens of the early Southern botanists, the very valuable herbarium of Dr. Chapman, and these sources will be augmented by the collections of local botanists who have promised to coöperate with me.

Asplenium Bradleyi D. C. Eaton, Bull. Torr. Club, **6**: 11 (1873).

Contrary to its usual habitat, which is perpendicular or overhanging and rather damp, disintegrating cliffs, Asplenium Bradleyi was found growing on horizontal, moss-covered granite rocks at the northern base of Stone Mountain, De Kalb county, Georgia, in April, 1893, altitude 1,000 feet.

Until lately this fern was one of those noted for its restricted geographical and geological range. Now it is seen to have an extensive and interesting distribution. The boundary of its area appears to be from Eastern New York to Kentucky, Tennessee and Arkansas to Middle Georgia, and north to Southeastern Pennsylvania. In Kentucky, Tennessee and Arkansas, the original localities, it was confined to the limestones and sandstones. In Southeastern Pennsylvania, where the best developed and most beautiful specimens have been found, some measuring almost one foot in length, it occurs on the rotting schistose rocks of the Lower Susquehanna Valley. In Middle Georgia we have it from the hard, white granite.

MELIA AZEDERACH L. Sp. Pl. 384 (1753).

"The Pride of India or China-Tree (*Melia Azederach* L.) belongs to an allied order MELIACEÆ." This statement we find in Chapman's Flora of the Southern United States. Having no position assigned to it in the Flora, we infer that at the time of publication this plant had not yet established itself in our country, but was perhaps frequent in cultivation throughout the extreme Southeastern States. Now the species is thoroughly naturalized in Middle and Southern Georgia and very likely in all the surrounding territory. During the past season I collected fruiting specimens near the base of Little Stone Mountain, De Kalb county, and at several localities on the rocky banks of the Yellow River in Gwinnett county. The prevailing common name in Middle Georgia is "China-berry."

BAPTISIA SERENÆ M. A. Curtis, Amer. Journ. Sci. (I.) 7: 406 (1845).

From the general appearance and acccording to Mr. Canby's key to the species of the genus *Baptisia* (Bot. Gaz. 4: 131) my Georgia specimens belong to the above. Heretofore it seems to have been known only from the region about Society Hill, South Carolina, where Mr. Curtis first collected it. While traveling between Toccoa Falls and Tallulah Falls, in Habershan county, Northern Georgia, I found the plant scattered quite plentifully through the open woods on mountain sides. Before August 8th, all the plants had matured their fruit and no flowers were secured.

AMORPHA VIRGATA n. sp.

Perennial, nearly glabrous, sometimes slightly glaucescent. Stems one or several from a woody base, 1–2 meters tall, erect or nearly so, rather stout, simple or branched only at the summit, wand-like, dark purple-green, more or less channeled, leafy only at the summit; leaves 8–16 cm. long, 6–8 cm. broad, leaflets 11–19, oblong, oblong-ovate or ovate, 2–5 cm. long, 1–2 cm. broad, mostly opposite, on petiolules 2–3 mm. long, emarginate and often apiculate by the excurrent mid-rib, obtuse or cordate, and unsymmetrical at the base, prominently nerved beneath, pubescent about the nerves on the under surface, rather dark but bright green above, brown beneath, very coriaceous and firm; inflorescence consisting of one or several narrow racemes, confined to the summit of the wand-like stems; racemes 8–15 cm. long (in fruit); calyx obconic-campanulate, 3 mm. long (in fruit), pubescent with a few spreading hairs, arranged in quite regular groups of 3–5, the three dorsal teeth acute, the two ventral teeth obtuse and rounded; pediceles short, inclined to separate at the proximal articulation; legume one-seeded, 7 mm. long, 3-4 mm. broad, *straight along the dorsal suture,* much curved along the ventral suture, resinous dotted, dorsal suture distinctly margined; persistent style attached, apparently, above the beak; seed ovoid, laterally compressed, inconspicuously beaked, about one-half as broad as long, with a lateral impression near one or both ends. (Plate 171.)

Found only on the northern and western slopes of Stone Mountain, De Kalb county, Georgia. Fruiting in July. It is apparently restricted to a narrow belt ranging from 1,100–1,200. feet above the sea level, and grows in a few places where the granite rocks are flat enough to hold a layer of sand. A striking species, remarkable in general appearance for its wand-like form, in particular parts for the dry, coriaceous leaves, the straight dorsal edge of the legume, and the single thick, ovoid seed with the impression near one or both ends. *A. fruticosa* is usually much branched throughout, of a lighter green color, with mostly membranaceous leaves, the legume *much curved on the dorsal edge,* with one or two narrowly or linear-oblong seeds, usually marked with an impression near the middle.

AMYGDALUS PERSICA L. Sp. Pl. 472 (1753).

In the past there have been many oversights and even a certain amount of narrowness in regard to foreign plants which have had a perfect right to become members of our naturalized flora, and which should have been recognized in our botanies. The above-named plant belongs to this class. It has doubtless been naturalized for many years, and now one meets with it throughout the Eastern United States. During the past season it was noticed at numerous localities in Middle Georgia, and was collected on the dry, rocky slopes of Stone Mountain, De Kalb county, early in July, at the altitude of 1,200 feet, well established and producing abundant fruit.

LAGERSTRŒMIA INDICA L. Sp. Pl. Ed. 2, 734 (1762).

This very ornamental shrub has long been cnltivated in gardens from Southern Virginia southward. Dr. Chapman gives it no place in the Southern flora, but prints this note: "The Crape Myrtle (*Lagerstrœmia Indica* L.) originally from Eastern Asia, is common in cultivation."* The species is now well established about Stone Mountain, De Kalb county, Georgia, and blooms in the middle part of the State at an elevation of 1,000 feet about the second week in July. This species has long been cultivated in South America, but according to Dr. Morong's observations it has not yet become naturalized in Paraguay.

NYSSA BIFLORA Walt. Fl. Car. 253 (1788).

Grows on the very summit of Stone Mountain, De Kalb county, Georgia, altitude 1,686 feet. It is remarkable that this tree usually confined to the seacoast or seaboard, from Southeastern Virginia southward, should occur in the above situation. There are a number of trees on the small dome-like top of the mountain, and they seem to flourish, although somewhat worn and torn by the heavy winds which sweep by their exposed habitat, and thrive notwithstanding the fact that they grow in but a few inches of sand collected in depressions of the hard granite rock.

GAYLUSSACIA DUMOSA (Andr.) T. & G.; A. Gray, Man. 259 (1848).

In 1891 the geographical and altitudinal range of this "coast" plant received a surprising extension by its discovery on a hillside near Hickory, in Western North Carolina, at an elevation of nearly 2,000 feet. (Mem. Torr. Club, 3 : 8.) During the season just past, while exploring in the vicinity of Tallulah Falls, Georgia,

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* Flora Southern U. S., 135.

I came upon great quantities of this species growing on the dry sand and quartzite hills north of the deep cañon of the Tallulah River, in Rabun county, at an altitude varying from 1,600 to 1,800 feet. Somewhat later, on a trip to the source of the Tallulah River, it was collected on the lower sandy slopes of the Thomas Bald, a high mountain on the North Carolina and Georgia boundary. There it ranged from 2,500 to 3,000 feet, and was scattered through the forests, at some places in great abundance, and grew vigorously, apparently none the worse for its separation from the influences of the coast.

The first record of the occurrence *Gaylussacia dumosa* at an appreciable distance from the seacoast seems to be in Prof. Porter's Catalogue of the Plants of Lancaster County, Pa. (Mombert's History of Lancaster County, Pa., p. 590). Prof. Porter found it in that section in a swamp, remarkable for its peculiar plant life, near Smithville. Mr. J. J. Carter encountered it somewhat later in a swamp bordering on the Serpentine Barrens, in the southern part of the same county.

The most interesting and striking fact suggested here is this: At the Pennsylvania localities the plant grows in swamps, and at Smithville is actually in the water, whilst in the mountains of North Carolina and Georgia, as far as I have observed, it selects the driest situations afforded.

RUBUS MILLSPAUGHII Britton, Bull. Torr. Club, **18**: 366 (1891).

Grows on the walls of the cañon at Tallulah Falls, Georgia Collected in flower in April, 1893. Altitude 1,600 feet. This most likely locates the southern limit of the geographical range of *R. Millspaughii.* Being a typically high mountain species, it is not to be expected much below 1,600 feet, and just south of the above mentioned locality the Blue Ridge "runs out" into the plains. Further south the land decreases gradually in altitude until the gulf is reached. According to my observations the above plant thrives most vigorously at altitudes ranging from 4,500 to 6,000 feet. It grows well at lower elevations, but never in such a prolific manner.

ERIGERON NEO-MEXICANUS A. Gray, Proc. Amer. Acad. **19**: 2 (1879).

Collected in Burnet county, Texas, in August, 1892, by F. G.

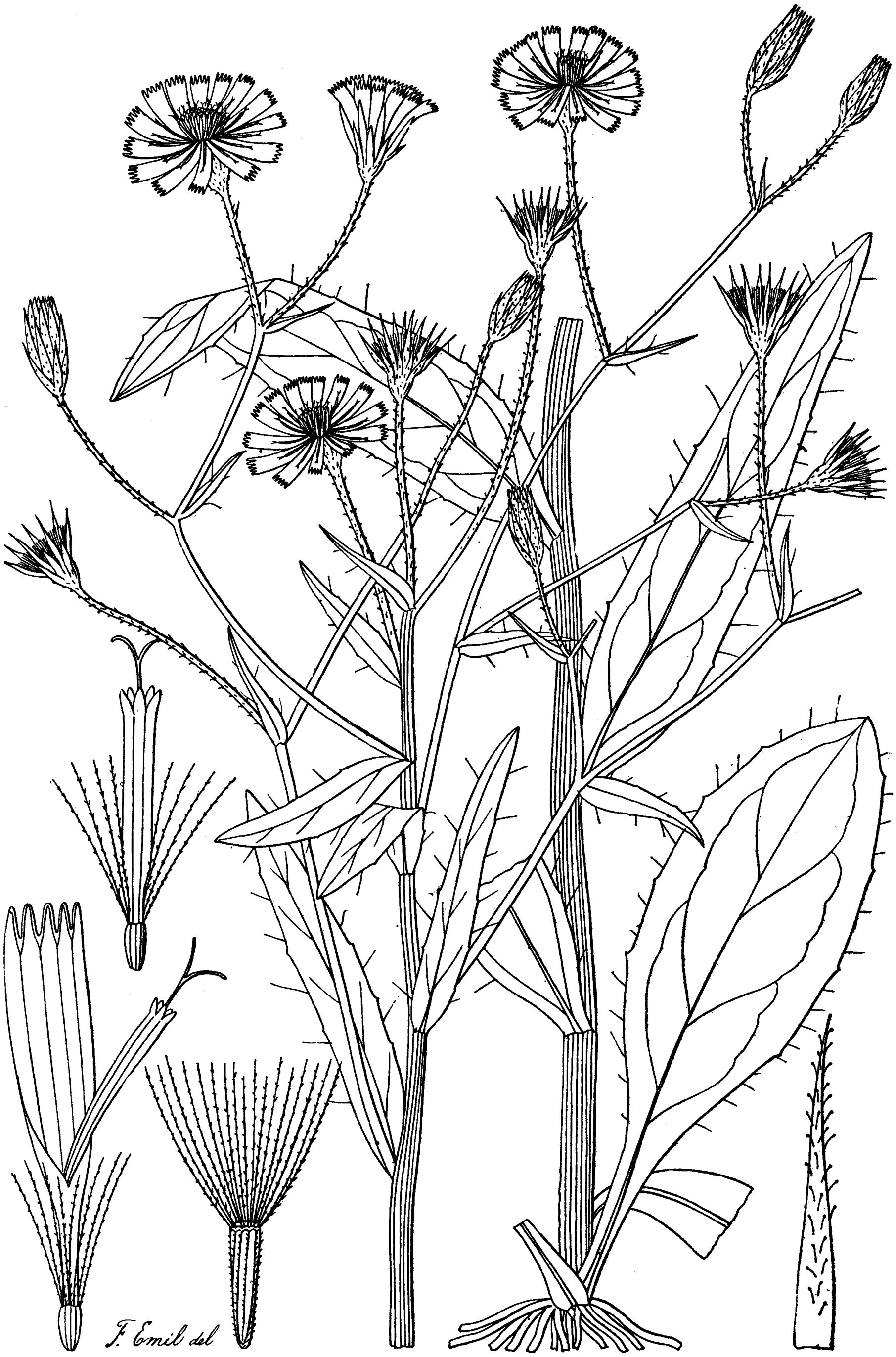
Schaupp. This discovery adds one of the species of the flora of Arizona and New Mexico to that of the Southeastern United States. An interesting leap from the plains of New Mexico to the valley of the Colorado River is Middle Texas.

HIERACIUM SCRIBNERI n. sp.

Annual or perennial, somewhat glaucescent throughout. Stem 4–5 dm. tall, erect, sparingly or diffusely branched above, leafy throughout, glabrous or somewhat pubescent below, with long, spreading, silvery hairs, often glaucous, more or less channeled and flexuous; peduncles and pedicels glabrous or densely glandular; leaves diverse in form, the lowest oblong or oblong-spatulate, 5–8 cm. long, on winged petioles, acute, acuminate at the base, the remaining oblanceolate, oblong, narrowly or linear-lanceolate, 4–12 cm. long, sometimes even fiddle-shaped, sessile or inclined to be decurrent, acute, all nearly glabrous on both surfaces, with a few scattered spine-like teeth, between which on and near the margin are few or numerous spreading silvery hairs; inflorescence more or less corymbose-paniculate; heads large, bright yellow, 2–2½ cm. broad; involucre nearly glabrous or glandular; principal bracts 1 cm. long, linear-subulate, acuminate, sometimes dilated at the base, smaller bracts ½–⅓ shorter; achene columnar, sometimes slightly constricted under the inconspicuous rim at the summit, rather inconspicuously ribbed; ribs barbed upward; pappus not exceeding the involucral bracts, rather light colored. (Plate 172).

Collected on Lookout Mountain, Tennessee, May 21, 1890, by Prof. F. Lamson-Scribner. Notwithstanding the early date the plants are mature and bear plenty of ripe achenes.

The specimens on which the above species is founded were distributed as *Hieracium paniculatum*, which species, however, it does not very closely resemble. It is more nearly related to *H. venosum* or *H. Marianum*, although abundantly distinct from either. From the former species it may be separated on sight by the leafy stem and pappus shorter than the principal involucral scales (in *H. venosum* the pappus is longer than the principal scales of the involucre, an important and striking character which seems to have been overlooked); from *H. Marianum* it differs in the more leafy stem and the usually diffuse, leafy branches.



HIERACIUM SCRIBNERI SMALL.